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# Electrical Safety & LOTO Review

## Extended Operations Council Meeting

R. C. McNair

October 22, 2002

# ELECTRICAL SAFETY & LOTO REVIEW

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## Assessment Team

■ Al Boerner	NSLS	■ Jon Sandberg	C-AD
■ Joe Curtis	ESH&Q	■ John DiNicola	PE
■ Emil Zitvogel	NSLS	■ Joe Jahelka	T&Q
■ Tom Nehring	C-AD	■ John Usher	IO
■ Steve Waski	PE	■ Bob McNair	IO

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## Assessment Plan Development & Deployment

- Input from Laboratory Electrical Safety Committee
- Input from DOE
- ESH 1.5.0 Electrical Safety
- ESH 1.5.1 LOTO
- Lessons Learned/ORPS
- Facility Procedures
- Lab & Facility Training
- Notified Facilities 3-5 Weeks in Advance
- Worked Around Facility Schedule
- Provided Immediate Feedback to Line Management
- Assessment still in progress

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## Strengths

- Configuration Management

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## Strengths

- LOTO Token Boxes

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## Strengths

- Auxiliary Lockbox

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## Strengths

- Reusable Hold Tags

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## Strengths

- Checklist for LOTO during shift change
- Verification of released LOTO



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## Strengths

- Use of Green “Disconnected Cable” tag

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## Strengths

- Cable labelling database

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## Strengths

- New electric panels are clearly labeled

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## Strengths

- Newer facilities have updated drawings and accurate load list

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## Strengths

- Line crew use of appropriate PPE

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## Strengths

- Replacing Plexiglas with fire retardant material

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## Strengths

- Communications of Lessons Learned

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## Areas For Improvement

- Approval of facility procedures by Laboratory Electrical Safety Officer



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## Areas For Improvement

- Performance of annual reviews

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## Areas For Improvement

- Logbook entries

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## Areas For Improvement

- Locks applied without tags

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## Areas For Improvement

- Tags applied without locks

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## Areas For Improvement

- Legibility of tags

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## Areas For Improvement

- Hold tag stubs

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## Areas For Improvement

- Transfer of tags when personnel leave

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## Areas For Improvement

- Key control in auxiliary facilities



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## Areas for Improvement

- Logging of Caution tags

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## Areas for Improvement

- Heeding Caution tag information

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## Areas for Improvement

- Labeling of disconnected cables

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## Areas for Improvement

- Trenches left open with energized cables



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## Areas for Improvement

- Load list in breaker panels/ MCC

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## Areas for Improvement

- Spare breakers found energized

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## Areas for Improvement

- Electrical drawings



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## Areas for Improvement

- Appropriate Personal Protective Equipment

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## Areas for Improvement

- Hotsticks

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## Areas for Improvement

- Unauthorized Electrical Work

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## Areas for Improvement

- Housekeeping

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## Recommendations

- Supervisors shall conduct and document annual reviews as per ESH 1.5.1
- ESH Standard 1.5.0 needs to catch up with the Electrical Safety training.

## NSLS RED TAGS & LOG BOOK

**HOLD**  
DANGER

INFORMATION INTO LOGGING  
THE CONTROL ROOM

## RED TAGS

**HON. TINA TUMA**

LOAD FROM STUDENT

CONTROL-ROOM

Patient Agreement

*User Registration Form*

SIGN  
ALL



**Apply**  
Your Safety lock  
each day  
when you first enter

**AND**

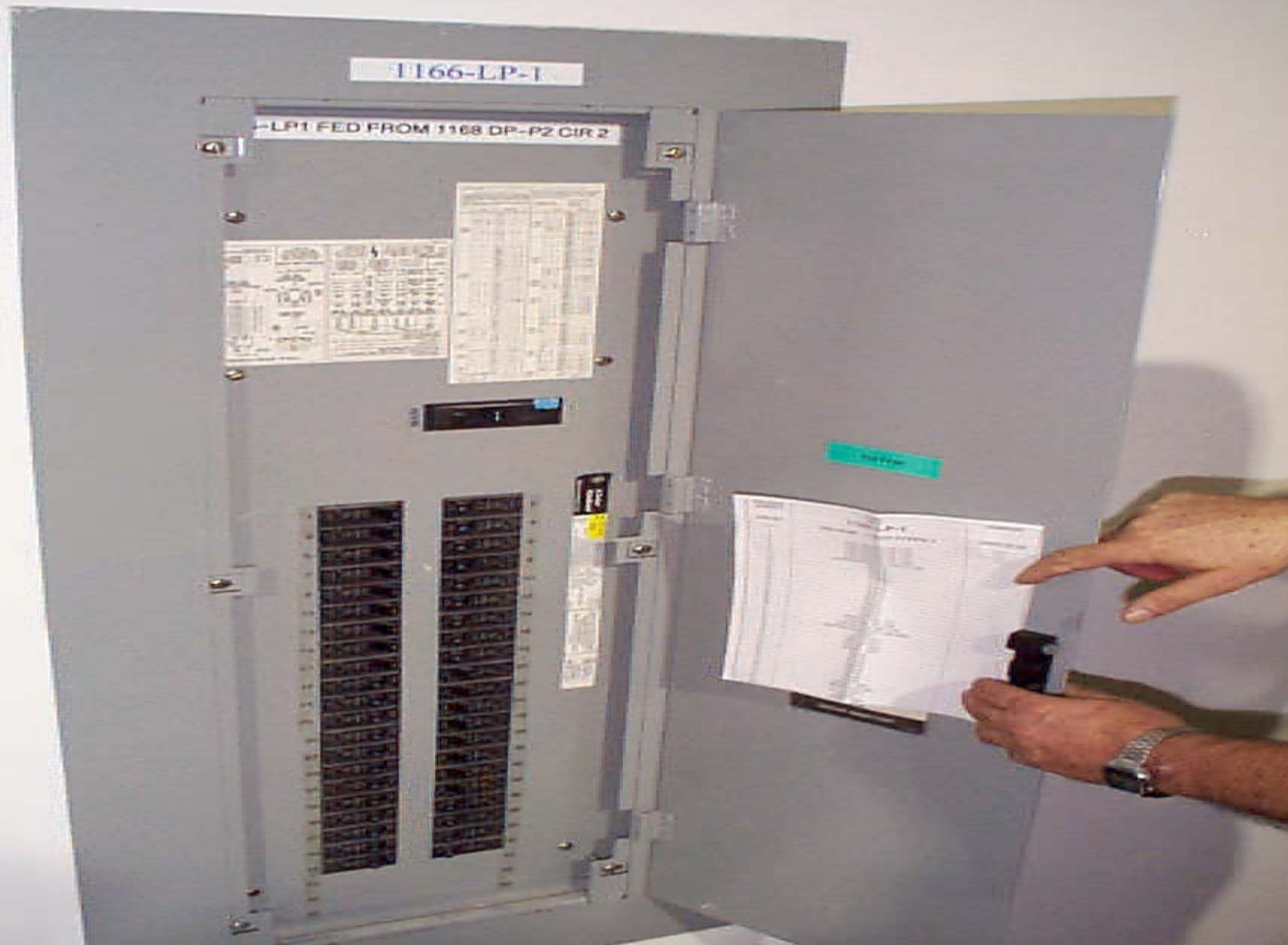
**Remove**  
Your Safety lock  
each day  
on last exit  
or  
when you go home



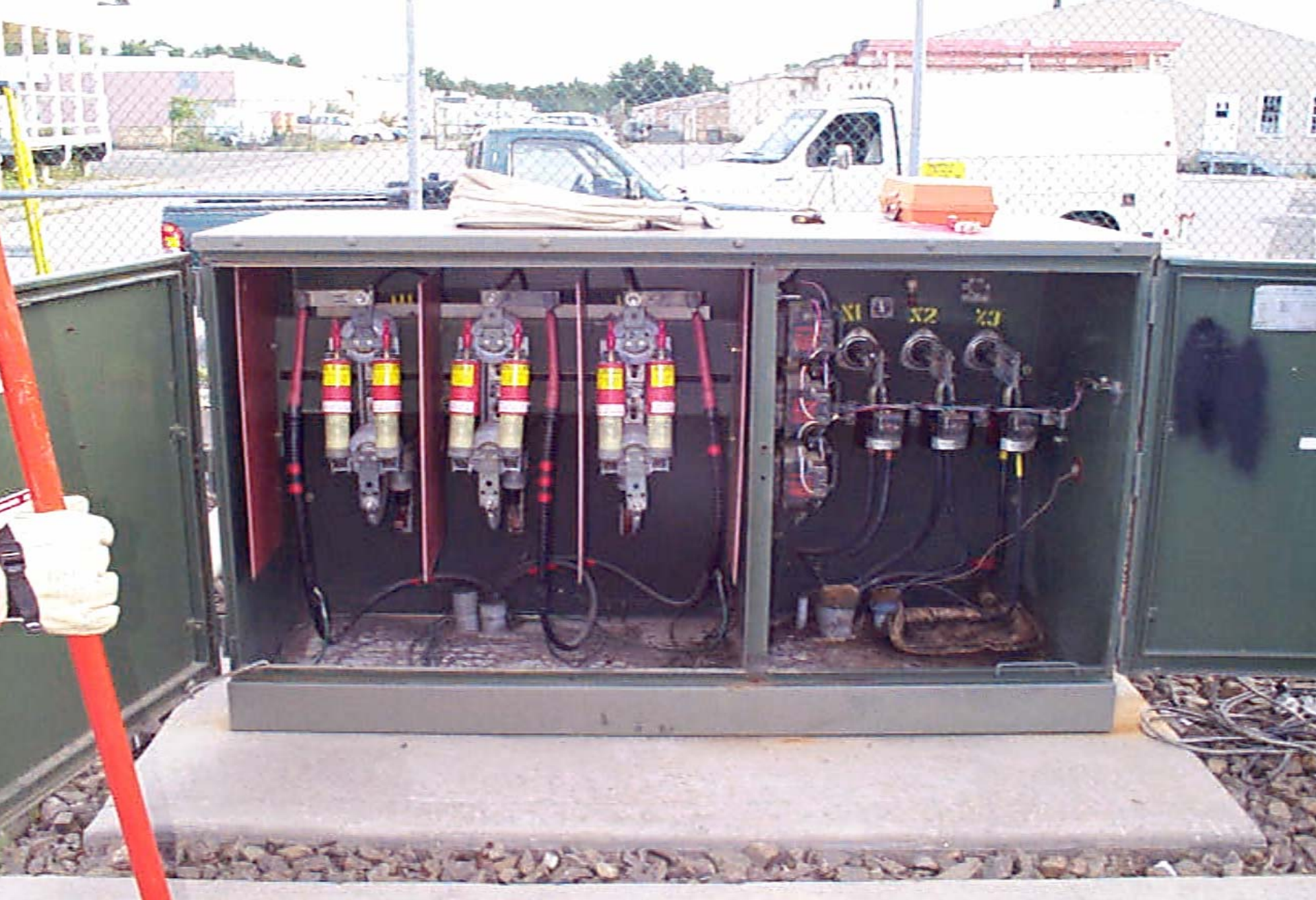
















PANEL 30 ↓↓↓↓

































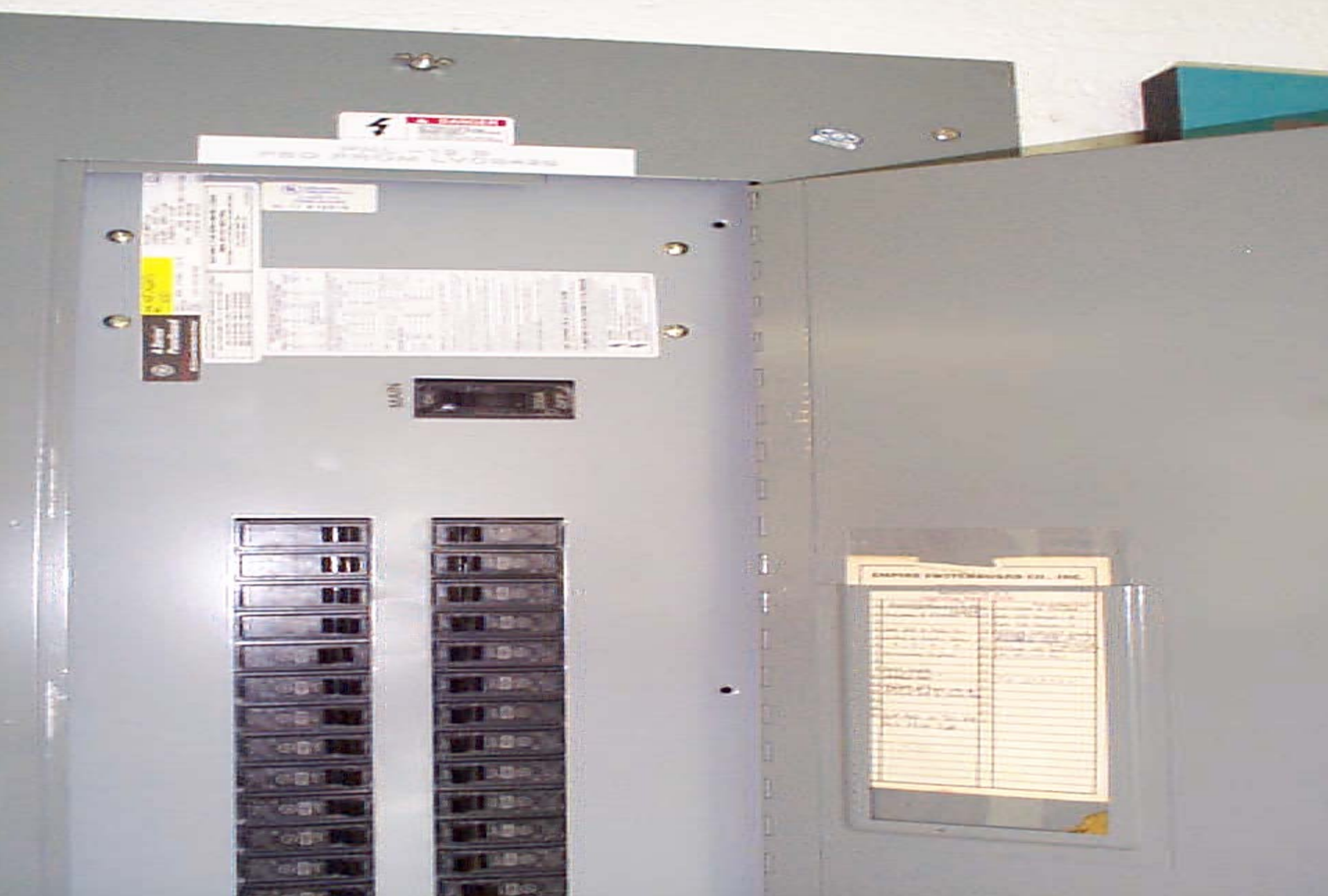








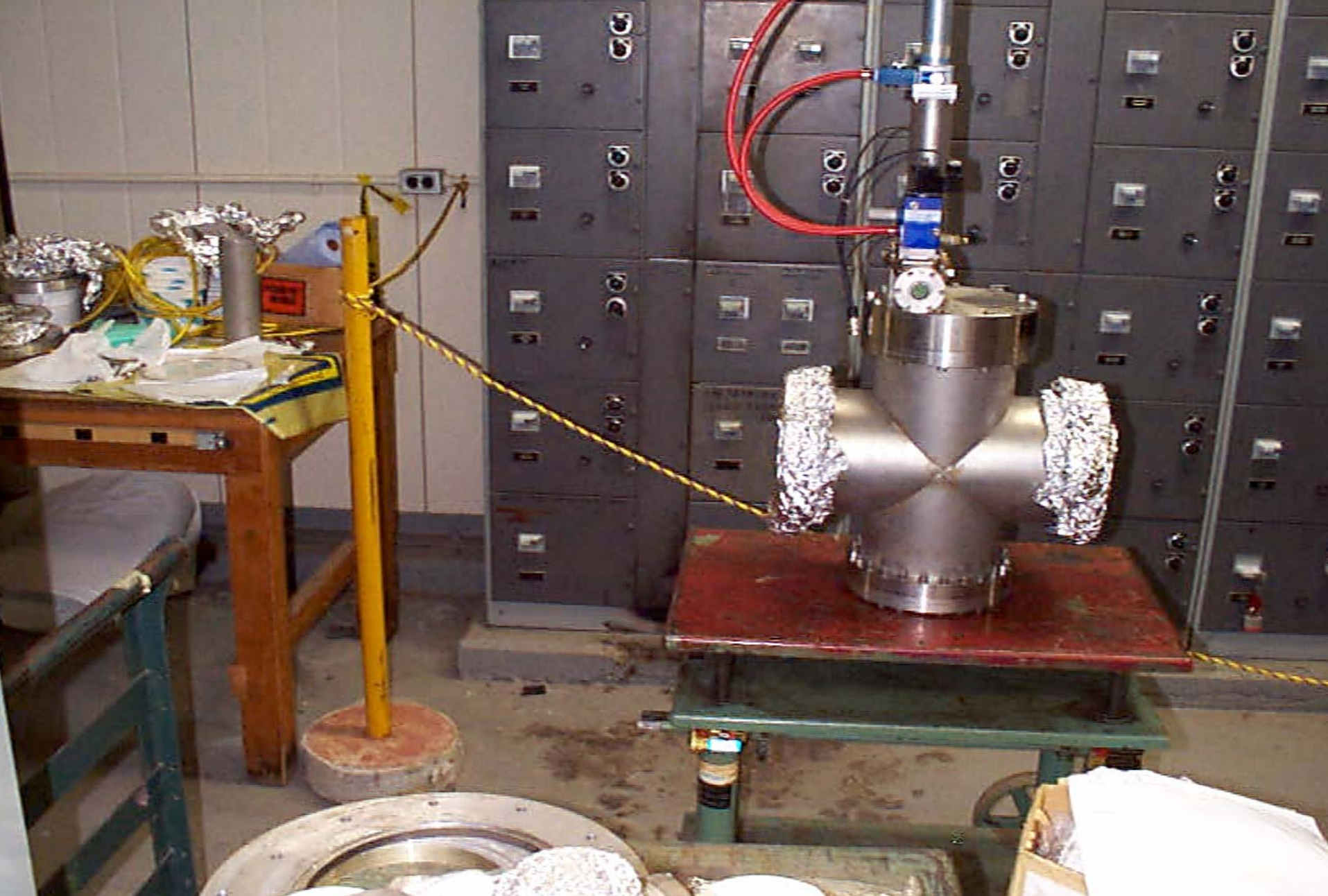




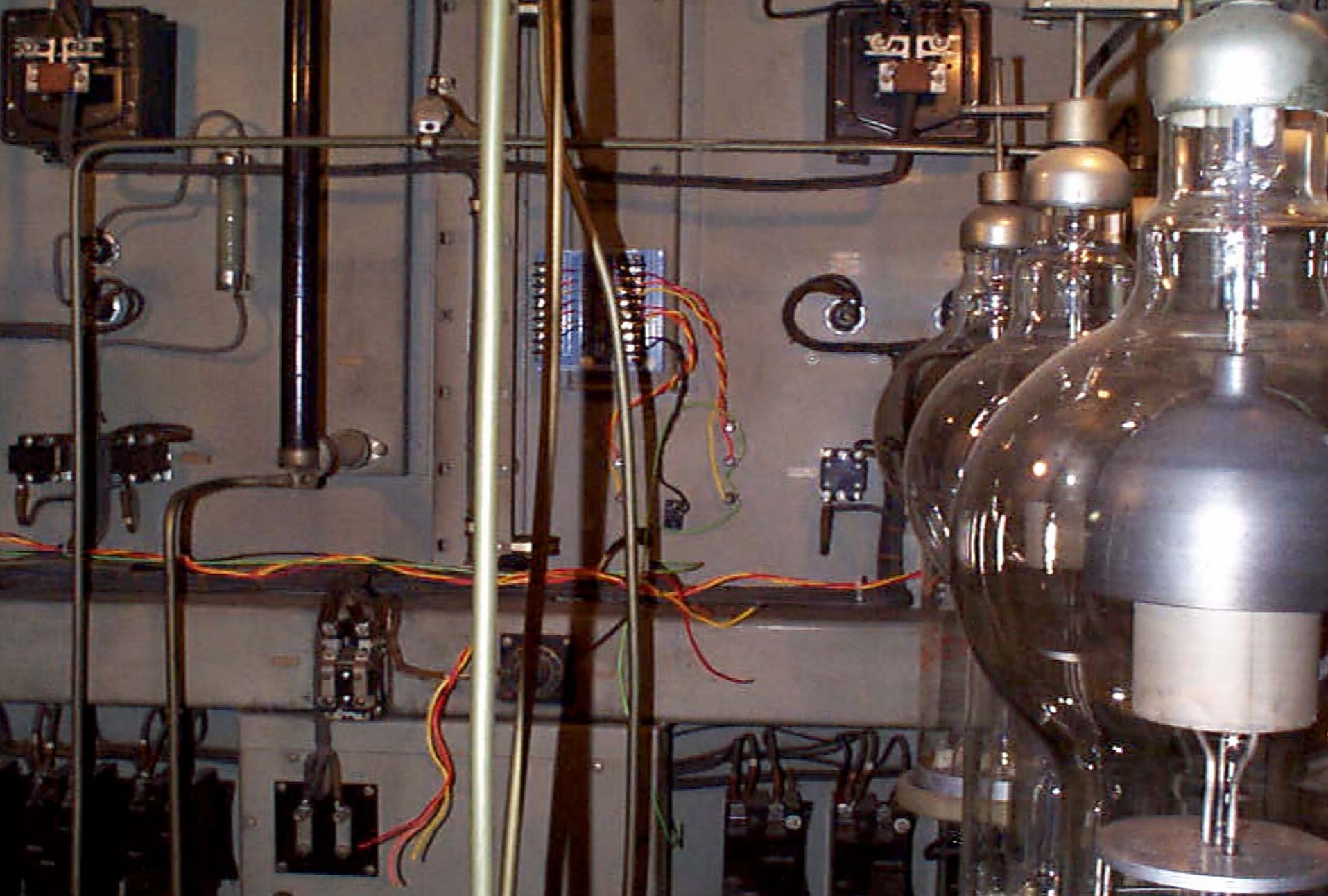




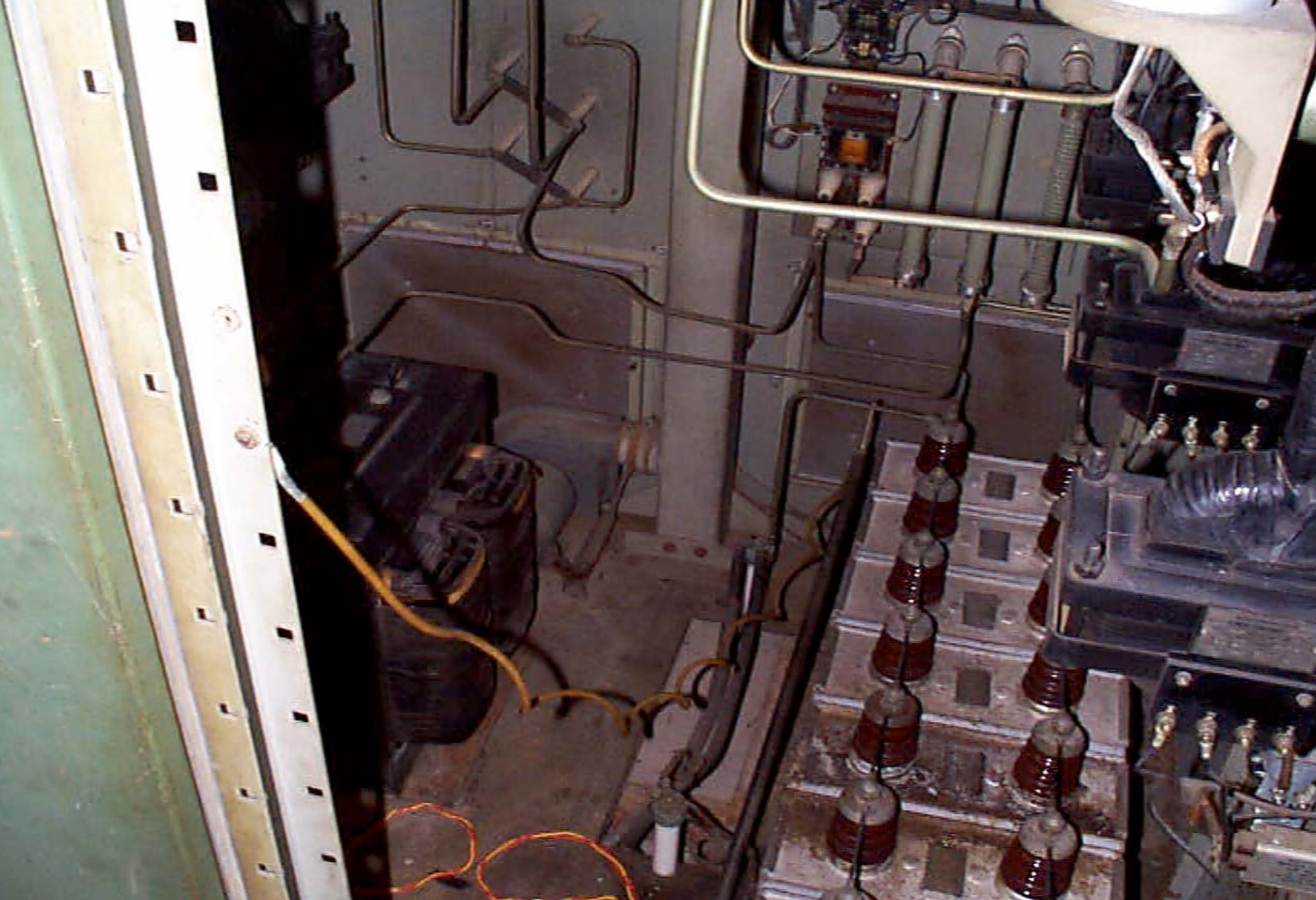


















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## Facilities Assessed

- AGS
- NSLS
- HFBR
- BGRR
- 901
- Field work

